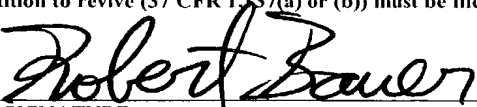


FORM PTO-1390) (REV. 9-2001)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER 367.41536X00 filed April 5, 2002	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 10/089992	
INTERNATIONAL APPLICATION NO PCT/EP00/09338		INTERNATIONAL FILING DATE September 15, 2000		PRIORITY DATE CLAIMED October 8, 1999	
TITLE OF INVENTION A PORTABLE DEVICE					
APPLICANT(S) FOR DO/EO/US SHARP, JONATHAN					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. 2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. 3. <input type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below. 4. <input checked="" type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31). 5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) a. <input type="checkbox"/> is transmitted hereto (required only if not communicated by the International Bureau). b. <input checked="" type="checkbox"/> has been communicated by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office(RO/US) 6. <input checked="" type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)). a. <input checked="" type="checkbox"/> is attached hereto. b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4). 7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau). b. <input type="checkbox"/> have been communicated by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input type="checkbox"/> have not been made and will not be made. 8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). 9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). 10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).					
Items 11 to 20 below concern document(s) or information included:					
11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. 12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. 13. <input checked="" type="checkbox"/> A FIRST preliminary amendment. 14. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. 15. <input type="checkbox"/> A substitute specification. 16. <input checked="" type="checkbox"/> A change of power of attorney and/or address letter. 17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825. 18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4). 19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4). 20. <input checked="" type="checkbox"/> Other items or information: Figs. 1a-1b, 2a-2b, 3-16, 17a-17b, 18a-18c, Credit Card Payment Form, International Preliminary Examination Report, International Publication Number WO 01/28193					

U.S. APPLICATION NO (If known, see 37 CFR 1.5)		INTERNATIONAL APPLICATION NO		ATTORNEY'S DOCKET NUMBER	
PCT/EP00/09338		PCT/EP00/09338		367.41536X00	
21. The following fees are submitted				CALCULATIONS PTO USE ONLY	
BASIC NATIONAL FEE (37 CFR 1.492(a) (1) - (5)):					
<input type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO \$1040.00					
<input checked="" type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$890.00					
<input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$740.00					
<input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$710.00					
<input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00					
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$890.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	\$	
Total Claims	8 - 20 =	0	x \$18.00	\$	
Independent Claims	1 - 3 =	0	x \$84.00	\$	
MULTIPLE DEPENDENT CLAIMS(S) (if applicable) 0			+ \$280.00	\$	
TOTAL OF ABOVE CALCULATIONS =				\$890.00	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				\$	
SUBTOTAL =				\$890.00	
Processing fee of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$	
TOTAL NATIONAL FEE =				\$890.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) \$40.00 per property				\$	
TOTAL FEES ENCLOSED =				\$890.00	
				Amount to be refunded:	\$
				charged:	\$
a. <input type="checkbox"/> A check in the amount of \$_____ to cover the fees is enclosed					
b. <input type="checkbox"/> Please charge my Deposit Account No. 01-2135 in the amount of \$_____ to cover the above fees A duplicate copy of this sheet is enclosed					
c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 01-2135 . A duplicate copy of this sheet is enclosed					
d. <input checked="" type="checkbox"/> Fees are to be charged to a credit card. WARNING: Information on this form may become public Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO					
Antonelli, Terry, Stout & Kraus, LLP 1300 North Seventeenth Street Suite 1800 Arlington, VA 22209 USA					
				 SIGNATURE	
				Robert M. Bauer NAME	
				34,487 REGISTRATION NO.	

10/089992

JC15 Rec'd PCT/PTO 0 5 APR 2002

367.41536X00

#4/a

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Jonathan SHARP
Application No.: Not yet Assigned
Filing Date: April 5, 2002
Title: A PORTABLE DEVICE

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

April 5, 2002

Sir:

Prior to examination, please amend the above-identified application as follows.

IN THE SPECIFICATION

Before line 3 on page 1, please insert the following heading:

--Field of the Invention--

Before line 8 on page 1, please insert the following heading:

--Background of the Related Art--

Before line 15 on page 1, please insert the following heading:

--Brief Summary--

367.41536X00

Please replace the paragraph beginning on page 1, line 15, with the following rewritten paragraph:

--According to the preferred embodiments, there is provided a portable device comprising a body; a cover having a closed position for at least partially covering the body and an open position; a display; and a multifunctional key accessible when the cover is in the closed position, wherein: the function of the multifunctional key is dependent upon the state of the device, and for at least one state of the device, operation of the key controls the provision of information on the display.--

Before line 1 on page 3, please insert the following heading:

--Brief Description of the Drawings--

Please replace the paragraph beginning at page 3, line 1 with the following rewritten paragraph:

--For a better understanding of the preferred embodiments of the invention and to understand how the same may be brought into effect reference will now be made by way of example to the enclosed drawings in which:--

367.41536X00

Please replace the sentence beginning on page 3, line 12 with the following rewritten sentence:

Figure 6 illustrates a first method of data entry;

Please replace the sentence beginning on page 3, line 14 with the following rewritten sentence:

Figure 7 illustrates a second method of data entry;

Please replace the sentence beginning on page 3, line 17 with the following rewritten sentence:

Figure 9 illustrates a third method of data entry;

Please replace the sentence beginning on page 3, line 19 with the following rewritten sentence:

Figure 10 illustrates a fourth method of data entry;

Please replace the sentence beginning on page 3, line 21, with the following rewritten sentence:

Figure 11 illustrates a method of variable scrolling speed;

Please replace paragraph beginning at page 13, line 8, with the following rewritten paragraph:

--According to a further aspect of the preferred embodiments, the speed of scrolling is determined by the position of the joystick as illustrated in Figure 11. A selectable item is highlighted as the items in a menu are scrolled through. A single movement of the joystick up or up or down (110) causes a display (menu or text) to be scrolled through by one line at a time. Thus in Figure 11 the highlighted item will change from Bruce to Carl. Pushing the joystick inwards (111) selects this item.--

Please replace the paragraph beginning at page 21, line 10, with the following rewritten paragraph:

--Although the user input device 28 has been described with reference to a joystick, the preferred embodiments are also applicable to other user input devices e.g., a roller or rocker key that is movable up, down, left, right and inwards.--

Please replace the paragraph beginning at page 21, line 14 with the following rewritten paragraph:

--The preferred embodiments of the present invention may include any novel feature or combination of features described herein either explicitly or implicitly or any generalisation thereof whether or not it mitigates any or all of the problems addressed. In view of the foregoing description it will be evident to a person skilled in the art that various modifications may be made within the scope of the invention.--

367.41536X00

IN THE CLAIMS:

Please delete claim 9 and amend claims 3, 5-6 and 8 to read as follows:

3. (Amended) A device as claimed in claim 1, which comprises a receiver.
5. (Amended) A device as claimed in claim 3, when the device is in a state corresponding to the receipt of a missed call, operation of the key controls the provision of information corresponding to the missed call.
6. (Amended) A device as claimed in claim 1, which comprises a transmitter.
8. (Amended) A device as claimed in claim 6 arranged to be coupled to a headset, and when the device is in a headset coupled state, operation of the key controls the provision of information corresponding to the last number dialed.

367.41536X00

IN THE ABSTRACT

Please insert the following paragraph:

--A portable device has a body, a cover and a key. The cover has a closed position for at least partially covering the body, and the key is accessible when the cover is in this position. The functionality of the key changes depending upon the state of the device. One such function is the control of the provision of information on a display of the device. This may occur, for example, if the key is actuated when the device is a phone and has received a message, or missed a call.--

367.41536X00

REMARKS

Attached hereto is a marked-up version of the changes made to the claims by the current preliminary amendment. The attached page is captioned **“Version with markings to show changes made.”**

To the extent necessary, Applicants petition for an extension of time under 37 CFR § 1.136. Please charge any shortage in fees due in connection with the filing of this paper, or credit any overpayment of fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (367.41536X00).

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP


Robert M. Bauer, Registration No. 34,487

RMB:cas
(703) 312-6600

Attachment

367.41541X00

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification

Paragraph beginning on page 1, line 15, has been amended to read as follows:

According to the ~~present invention~~ preferred embodiments, there is provided a portable device comprising a body; a cover having a closed position for at least partially covering the body and an open position; a display; and a multifunctional key accessible when the cover is in the closed position, wherein: the function of the multifunctional key is dependent upon the state of the device, and for at least one state of the device, operation of the key controls the provision of information on the display.

Paragraph beginning at page 3, line 1 has been amended to read as follows:

For a better understanding of the ~~present~~ preferred embodiments of the invention and to understand how the same may be brought into effect reference will now be made by way of example to the enclosed drawings in which:

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Sentence beginning on page 3, line 12 has been amended to read as follows:

Figure 6 illustrates a first method of data entry ~~in accordance with the invention;~~

Sentence beginning on page 3, line 14 has been amended to read as follows:

Figure 7 illustrates a second method of data entry ~~in accordance with the invention;~~

Sentence beginning on page 3, line 17 has been amended to read as follows:

Figure 9 illustrates a third method of data entry ~~in accordance with the invention;~~

Sentence beginning on page 3, line 19 has been amended to read as follows:

Figure 10 illustrates a fourth method of data entry ~~in accordance with the invention;~~

Sentence beginning on page 3, line 21, has been amended to read as follows:

Figure 11 illustrates a method of variable scrolling speed ~~in accordance with the invention;~~

Paragraph beginning at page 13, line 8, has been amended to read as follows:

According to a further aspect of the ~~invention~~ preferred embodiments, the speed of scrolling is determined by the position of the joystick as illustrated in Figure 11. A selectable

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item is highlighted as the items in a menu are scrolled through. A single movement of the joystick up or up or down (110) causes a display (menu or text) to be scrolled through by one line at a time. Thus in Figure 11 the highlighted item will change from Bruce to Carl. Pushing the joystick inwards (111) selects this item.

Paragraph beginning at page 21, line 10, has been amended to read as follows:

Although the user input device 28 has been described with reference to a joystick, the ~~invention is~~ preferred embodiments are also applicable to other user input devices e.g. a roller or rocker key that is movable up, down, left, right and inwards.

Paragraph beginning at page 21, line 14 has been amended to read as follows:

The preferred embodiments of the present invention may include any novel feature or combination of features described herein either explicitly or implicitly or any generalisation thereof whether or not it mitigates any or all of the problems addressed. In view of the foregoing description it will be evident to a person skilled in the art that various modifications may be made within the scope of the invention.

In the Claims

3. A device as claimed in claim 1 ~~or 2~~, which comprises a receiver.

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5. A device as claimed in ~~any preceding~~ claim 3 ~~wherein~~, when the device is in a state corresponding to the receipt of a missed call, operation of the key controls the provision of information corresponding to the missed call.

6. A device as claimed in ~~any preceding~~ claim 1, which comprises a transmitter.

8. A device as claimed in claim 6 ~~or 7~~ arranged ~~for coupling~~ to be coupled to a headset, and when the device is in a headset coupled state, operation of the key controls the provision of information corresponding to the last number dialed.

In the Abstract

A portable device ~~(2) is disclosed which comprises~~ has a body, a cover ~~(6)~~ and a key ~~(36)~~. The cover ~~(6)~~ has a closed position for at least partially covering the body, and the key is accessible when the cover is in this position. The functionality of the key changes depending upon the state of the device. One such function is the control of the provision of information on a display ~~(26)~~ of the device. This may occur, for example, if the key is actuated when the device is a phone and has received a message, or missed a call.

A PORTABLE DEVICE

The present invention relates to a portable device. In particular, it relates to
5 the user interface of a portable device, such as a radio communications device.

There is currently a trend to strive towards the miniaturisation and wearability of portable devices. Particularly where phones are concerned, this results in a
10 trade off against the ergonomics and ease of use of a conventional handset. One option is to compromise on the functionality of the device. However, another is to develop a new user interface that still supports typical features, such as phone calls, messaging and paging in an easily accessible way.

15 According to the present invention, there is provided a portable device comprising a body; a cover having a closed position for at least partially covering the body and an open position; a display; and a multifunctional key accessible when the cover is in the closed position, wherein: the function of the multifunctional key is dependent upon the state of the device, and for at
20 least one state of the device, operation of the key controls the provision of information on the display.

The device has a key that is readily accessible to the user when the cover of the device is closed. For example, even if the user is wearing the device
25 under a sleeve (e.g. a wrist device) or in a pocket, he can actuate this key to perform at least basic functions without looking at the device. The key may be the only one on an accessible surface of the device when the cover is closed. The function of this key is dependent upon the state of the device when the key is actuated, and thus performs a convenient, and maybe even expected,
30 function. One of the functions is the control of information presented on the display.

The portable device may comprise a transmitter and/or receiver.

The display presents different information depending upon the state of the device. For example, when the device is in a state corresponding to the receipt of a message, operation of the key controls the provision of information corresponding to the message. Likewise, when the device is in a state corresponding to the receipt of a missed call, operation of the key controls the provision of information corresponding to the missed call. If the device is in the idle state when the key is operated, then one option is to control the provision of last number redial information on the display. Furthermore, if a headset is attached to such a device, then operation of the key may also control the provision of information corresponding to the last number dialled.

20 Operation of the key is preferably a single actuation, as this is intuitive for the
user - he does not have to remember different actuation methods for different
functions.

25 The key may be a button, but this is not essential. Alternatively, it may be a particular position of a multipositional device, such as a rocker, roller or joystick.

Furthermore, the key may function either dependently or independently of the position of the cover. If dependent upon the position of the cover, the key may be active when the cover is closed and inactive when the cover is open.

For a better understanding of the present invention and to understand how the same may be brought into effect reference will now be made by way of example to the enclosed drawings in which:

- 5 Figure 1a is a front perspective view of a phone in a closed configuration;
 Figure 1b is a side perspective view of the phone in a closed configuration;
 Figure 2a is a front perspective view of the phone in an open configuration;
 Figure 2b is a side perspective view of the phone in an open configuration;
 Figure 3 is a schematic illustration of the phone;
- 10 Figure 4 is an illustration of the joystick of the phone;
 Figure 5 illustrates the Menu structure in the phone;
 Figure 6 illustrates a first method of data entry in accordance with the
 invention;
 Figure 7 illustrates a second method of data entry in accordance with the
 invention;
- 15 Figure 8 is a front perspective view of the phone in an open configuration;
 Figure 9 illustrates a third method of data entry in accordance with the
 invention;
 Figure 10 illustrates a fourth method of data entry in accordance with the
 invention;
- 20 Figure 11 illustrates a method of variable scrolling speed in accordance with
 the invention;
 Figure 12 is a flow chart illustrating the multiple functionality of an on/off
 switch of the phone;
- 25 Figure 13 illustrates various idle screens;
 Figures 14 and 15 illustrate the functionality of an easy access button; and
 Figure 16 illustrates various message screens.
 Figure 17a illustrates how message functions can be accessed through the
 Menu 50;
- 30 Figure 17b illustrates various formats that a displayed message or displayed
 caller details may take;
 Figure 18a illustrates how a message may be read when received with the
 cover open;

Figure 18b illustrates how a message may be read when received with the cover closed using the easy access key and then optionally opening the cover;

Figure 18c illustrates how a message may be read when received with the
5 cover closed without using the easy access button but by opening the cover.

Figures 1 and 2 illustrate a phone 2. The phone has a body portion 4 and a cover portion 6 connected by a hinge 5. The cover is movable between a closed position as illustrated in Figures 1a (front perspective) and 1b (side perspective) and an open position as illustrated in Figures 2a (front perspective) and 2b (side perspective).

The body portion 4 includes a back face 7 which forms the back of the phone, lateral side faces 8a and 8b which form the sides of the phone, an upper side face 10 which forms the top side of the phone, a lower side face 12 which forms the bottom side of the phone, and a front face 14 which is exposed when the cover is in the open position and concealed when the cover is in the closed position. The body has: an antenna 16 on its upper side face 10; a microphone 18 on its lower side face 12; an open-cover button 20, a voice dial button 22, and an on/off button 24 on its side faces 8; and has a display 26 and a user input device 28 which is preferably a joystick on its front face 14. The buttons are user actuatable. The body also has a hinge switch 30 (not shown) which detects the position of the cover, being actuated when the cover opens and closes.

25 The cover portion 6 has an exterior surface 32 which is accessible when the cover is in the closed position and an interior surface 34 which is inaccessible when the cover is in the closed position but is exposed when the cover is in the open position. The cover portion has on its exterior surface 32 an easily
30 accessible button 36 and a speaker 38. The cover portion has on its interior surface 34 a speaker 40. The cover also has an aperture 42 extending all the way through the cover. The aperture is positioned and sized so that when the cover is in the closed position only a first portion 26a of the display 26 is

visible through the aperture 42 to the user. The aperture may be covered with a transparent material to allow the user to see the first portion of the display 26a.

- 5 When the cover is in the closed position the interior surface 34 of the cover abuts with the front face 14 of the body 4. The cover is arranged and sized to enclose the input device 28 and display 26 to prevent access by the user. A portion 26a of the display 26 may, however, be viewed by a user through the aperture 36.

10

When the cover is in the open position the front face 14 of the body and the interior surface 34 of the cover 6 form an oblique angle of between 135 and 175 degrees. In this configuration the whole of the display 26 is exposed, the user input device 28 is exposed and the microphone 18 on the lower side face 12 of the body 4 and the speaker 40 on the interior surface 34 of the cover 6 are at their maximal separation.

15

The dimensions of the phone in this example are : length 60mm, width 40mm depth 20mm approx. The display is 2.1 x 1.4 cm (84x48 pixels).

20

Figure 3 is a schematic illustration of the phone 2. The phone 2 has the previously described antenna 16, voice dial button 22, on/off button 24, input device (joystick) 28, hinge switch 30, easily accessible button 36, microphone 18, display 26, speakers 40 and 38. In addition the phone has a processor 44, a transceiver 46 and a memory 48. The antenna 16 is connected to the transceiver 46. The transceiver has reception circuitry for receiving radio frequency signals encoded with data. It processes the received signals as is known in the art to provide the data in digital form to the processor 50. This data may be a voice message or part of a phone conversation in which case the processor controls the speaker 40 to provide an audible output to the user. Alternatively the data may be part of an alphanumeric message in which case the processor 44 is operable to provide the message on the display. The transceiver has transmission circuitry which is provided with digital data from

25

30

The antenna 16, transceiver 46, processor 44, memory 48, display 26, speaker and microphone 18 are standard features of a phone. Previously such features have operated in combination with a keypad to provide the standard functions of a phone including making a call either via a phone book or by direct character entry, receiving a call, creating and sending a message, reading a received message and maintaining a phonebook. However, in the phone 2, the features operate in combination with the joystick 28 to provide these standard functions.

Previously in the NOKIA 6110 telephone the keypad had 12 alphanumeric keys, two soft keys whose function changes and a scroll key . The functions of that phone are accessed through a Menu which is navigated using the soft keys and the scroll key. In the phone 2, the functions of the phone are
5 accessed through a Menu which is navigated using the joystick 28.

Figure 4 illustrates the joystick 28 which can be moved with a user's thumb. The joystick can be pushed forward (towards the display) while simultaneously pushed to the left or right, pushed to the left or right while
10 simultaneously pushed up or pulled back (towards the microphone), and pulled back while simultaneously being pulled left or right. In addition to each of the above movements the joystick may be simultaneously pushed inwards towards the face 14. The joystick 28 has a resting position and it is resiliently biased so that it returns to its resting position when the user has moved it or
15 depressed it and then released it.

The joystick operates in two different modes. The joystick operates by default in "navigation" mode except when it is in "text editing" mode. In navigation mode there are five independent mutually exclusive activation states for the
20 joystick.

When the joystick is pushed up, the processor performs an upward scrolling function within the current level of the Menu and updates the display accordingly. When the joystick is pulled back, the processor performs a
25 downward scrolling function within the current level of the Menu and updates the display accordingly. These scrolling functions are the same as those scrolling functions in the NOKIA 6110. When the joystick is pushed to the left, the processor exits to the previous higher level in the Menu. When the joystick is pushed to the right, the processor presents on the display the options
30 available to the user but in the Idle Mode it brings up the Menu. When the joystick is pushed inwards the processor enters the next level of the Menu or if there are no further levels it will display the options available to the user.

Figure 5 illustrates the layout of a Menu 50. When the phone is first switched on it enters the Idle state 54 in which it waits to receive a call or for user actuation. The joystick is in navigation mode. Pushing the joystick to the right enters the Menu 50. The Menu has on its first level 52 seven selectable items.

5 These items are: Number Dial 521 which allows the user to input a number or select a number from memory for dialling; Call Divert 522 which includes options for diverting an incoming call to another number; Settings 523 which includes settings related to calls, phone and security; Profiles 524 which includes options for a user to customise the modes of phone use; Names 525

10 which is an editable phonebook from which calls can be made; Call Register 526 which includes a record of phone calls made; and Messages 528 which includes options for reading and composing text messages. The user can move from one item to an adjacent item by pushing the joystick up or down. The user can select an item and enter the second level 53 of the menu by

15 pushing the joystick in. The user can return to the idle state from the first level 54 by pushing the joystick to the left.

The Menu items are the same as those in the NOKIA 6110 except that the joystick is used to navigate the Menu 100 and that due to the absence of an

20 alphanumeric key keypad a new Number Dial item 521 is provided and new alphanumeric character entry methods are provided within each of the items where necessary.

In Idle mode the joystick has several pre-defined modes of operation. Pulling

25 the joystick back causes the Names menu 525 to be displayed. Pressing the joystick inwards results in a shortcut to redial the last number dialled. Pressing the joystick inwards when an alphanumeric message is received causes the phone to display the Message "In Box" to read the message. Pressing the joystick inwards when an incoming call is received causes the

30 incoming call to be answered.

The "text editing" mode of the joystick is active when alphanumeric character entry is required. In this mode the joystick operates in the same manner as an

25 A mixed menu of characters and operands for functions of the phone, (e.g. to make a call) is used. In this case, the joystick is used to navigate to the Number Dial menu which is then selected by pushing the joystick inwards. A menu is displayed on the display and a user selects the numerical characters by pushing forward and pulling back the joystick as appropriate. Once the
30 number input is complete, the user selects the Call operand item from the menu and the call is established.

Figure 6 shows the display 26 displaying the "Number Dial" menu item 521. In figure 6 a left arrow indicates that the joystick is pushed to the left, a right arrow indicates that the joystick is pushed to the right, an up arrow indicates that the joystick is pushed forward, a down arrow indicates that the joystick is pulled back and the symbol • indicates that the joystick is pushed inwards. A user selects the Number Dial option by pushing the joystick inwards (602) as described previously.

The display then changes to a text input mode with a menu 60 on the right-hand side of the display. The items of the menu 60 comprise both alphanumeric characters and operands, e.g. Call, OK, Name, Add etc. These operands can be represented textually or graphically as shown in Figure 6. The icon 66 of a phone indicates the call operand. Thus a user can access the required functionality of the phone without having to move to a separate menu to carry out an action.

To select from the menu 60, a user scrolls through the menu (604) by pushing the joystick forward (if movement up the menu is required) or pulling the joystick back (if movement down the menu is required). Each item in the menu 60 is highlighted at the bottom right-hand corner of the display as the menu is scrolled. When the required alphanumeric character is highlighted, the user selects the character (606) by pushing the joystick inwards. The selected character 62 is then displayed on the left-hand side of the display 26, adjacent the menu 60. This action is repeated (608) until the text input is completed.

When the user has finished inputting the number, the user selects the phone icon 66 from the menu 60 by pushing the joystick inwards (610). The display 26 then changes (612) to indicate that this operand is being performed and the device proceeds to try to establish the call.

As described previously, pushing the joystick to the right at any time (614) causes the display of options available to the user at that time and pushing the joystick to the left at any time (616) causes the current menu to be exited.

- 5 Figure 7 shows the menus available when the Name menu 525 is selected. The user is presented with the "Add Name" option 72 and inputs a name using the alphanumeric characters in the menu 70. Again the items of the menu 70 comprise both alphanumeric characters and operands, e.g. OK, Caps (for capital letters), Insert, Exit etc. Once the name has been input, the
- 10 user then selects from the menu 70 the required operand e.g. OK. When this operand is selected (702) the user is presented with the "Add Number" option 74 and a menu 76 of operands and numeric characters. Once the number to be associated with the name has been entered, the user selects the required operand from the menu 76 e.g. OK and the name and number are stored
- 15 (704) in the memory 48 of the phone as a phone book entry. Suitable operands are OK, Insert and Cancel.

Alternatively the menus 60, 70, 76 may be provided at the bottom of the display in a horizontal manner. The menu items may be displayed a line at a

20 time with an up/down movement of the joystick resulting in the display of successive lines of menu items and a left/right movement of the joystick resulting in the highlighting of successive items in the line of the menu 60.

The joystick may also be used to input data directly, without the requirement

25 for a menu of options to be displayed on the screen. For instance, the input device 28 may be used to input numeric characters. Figure 8 shows an example of such a joystick. In Figure 8, feedback to the user about the characters available is provided around the joystick, on the front face 14 of the body 4. Alternatively this feedback may be provided on the display 26.

30

In this mode, a user is prompted to use the joystick to input numbers, for instance by an image 90 on the display 26 (see Figure 9). If the user pushes the joystick forward the numbers 1, 2 or 3 may be selected; if the user pushes

the joystick to the right the numbers 4, 5 or 6 may be selected; if the user pulls the joystick back the numbers 7, 8 or 9 may be selected; if the user pushes the joystick to the left the number 0 and the characters * and # may be selected. Pushing the joystick repeatedly in one direction causes the characters available to be scrolled through; a character may be selected either if a pre-determined time has elapsed without any further input from a user or by the user pushing the joystick inwards (902) for a short time.

Once the user has input the number by successively pushing/pulling the joystick and then pushing the joystick inwards (904-908), the user pushes the joystick inwards for a relatively long time (e.g. 1-2 seconds) (910). This causes a menu 94 to be displayed. The user selects the appropriate action by pushing the joystick inwards (912) and the device carries out the action.

In a similar manner, the joystick may be used to input alpha characters. In this mode, a user is prompted to use the joystick to input alpha characters, for instance by an image on the display 26. If the user pushes the joystick forward the characters a, b, c, d, e, f, g may be selected; if the user pushes the joystick to the right the characters h, i, j, k, l, m may be selected; if the user pulls the joystick back the characters n, o, p, q, r, s, t may be selected; if the user pushes the joystick to the left the characters u, v, w, x, y, z and "space" be selected. Pushing the joystick repeatedly in one direction causes the characters available to be scrolled through; a character may be selected either if a pre-determined time has elapsed without any further input from a user or by the user pushing the joystick inwards for a short time.

The device may be arranged to default to the mode of data input. Alternatively it may be a mode that is activated by the user selecting the option in the device's Profiles 524.

30

A further method of data input will now be described with reference to Figure 10. A user scrolls through a list of characters 100 in blocks of three 102 by pushing the joystick forward or pulling the joystick back. The user selects a

According to a further aspect of the invention, the speed of scrolling is determined by the position of the joystick as illustrated in Figure 11. A selectable item is highlighted as the items in a menu are scrolled through. A single movement of the joystick up or down (110) causes a display (menu or text) to be scrolled through by one line at a time. Thus in Figure 11 the highlighted item will change from Bruce to Carl. Pushing the joystick inwards (111) selects this item.

Moving the joystick up or down and holding it in this position whilst also pressing in on the joystick (113) results in a higher speed of continuous scrolling. Thus the display changes from Graham, Guy, Helen to further down
25 the menu (e.g. Susa, Tom, Trevor) faster than previously. Thus a user can quickly scroll through a long list until the general region of the required item is located and then release the inward pressure on the joystick to cause the speed of scrolling to reduce. The joystick can then be held in the up (or down) position until the required item is located. The joystick is released and
30 pushing the joystick inwards (111) then selects the highlighted item.

The hinge switch 30 is activated when the cover 6 is opened and is activated when the cover is closed. The switch detects when the interior surface 34 of

the cover 6 makes a specific acute angle (for example 5 degrees) with the front face 14 of the body 4. The processor maintains a register which changes state when the hinge switch is activated. The processor is therefore aware of whether the cover is in the open or closed position. The processor also
5 detects via the hinge switch 30 when the cover is opened and when the cover is closed.

Turning now to the on/off button 24 of the phone, illustrated in Figure 3, this button has multiple functionality. In this embodiment, the functionality is
10 determined by the manner of actuation of the button 24 and/or the state of the phone. Figure 12 illustrates how the processor 50 determines which function to perform when the on/off button is actuated.

The processor waits for actuation of the on/off button 24 by the user
15 (Step120). When the button is actuated, the processor 50 proceeds to Step 121. In this case, the processor 50 responds differently when the button is depressed and released (short press) compared with when the button is held in a depressed position and then released (long press). The processor senses the input from the button. When the button is activated the processor
20 starts a timer. When the button is deactivated the processor stops the timer. If the count of the timer is less than a predetermined threshold the processor determines that the user employed a short press and wishes to access a function or function associated with that method. Consequently, the processor moves to step 122.

25 Alternatively, if the count of the timer is equal to or more than a predetermined threshold (typically 1-2 seconds) the processor determines that the user employed a long press (Step 125). In this case, a long press is indicative of a power off function, and consequently, the processor performs this function in a
30 conventional manner.

Turning back now to Step 122, the short press is not indicative of a single function. Instead, the function depends upon the state of the phone. If not in

an initial period, a first idle screen 134 is presented, that comprises the word "Headset" and icon of a headset. After this period, the processor controls the display to present a second idle screen 135 in which the word "Headset" is replaced with the time.

5

Idle mode screen may depend upon the placement or use of the product. For example, if the phone is a wrist-worn device its idle screen may have prominent watch functions such as time zones, alarms or analogue looking clock faces. Similarly, personalisable wearable products may have user defined bitmaps.

10

Easy access button 36 has multiple functionality when the phone is in the closed configuration and no function, it is disabled, when the cover is opened. In this context, multiple functionality does not mean that the button has multiple functions simultaneously, it does not. At any time, the button 36 has only a single function. However, that single function may be one of many depending upon the state of the phone. Generally, actuation of the button provides the most likely response to a given situation. It does not delete or change things. If the alarm rings, activation ends the ringing. If there is an incoming call activation mutes the ringing. If a message has just been received activation opens the message. If a call has just been missed activation gives the caller's details. If the phone is in the Idle state, activation redials the last dialled number.

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Figures 14 and 15 illustrate how the processor 50 determines which function to perform when the easy access button 36 is actuated.

Firstly, the processor 50 determines whether the phone's cover is in its closed position (Step 141). If it is, the processor waits for actuation of the easy access key by the user (Step 142). However, if the phone is in its open configuration, then the processor disables the easy access key (Step 144). This disablement may be complete or partial disablement of the phone. Complete disablement may, for example include the processor not responding

30

at all to key actuation, so that even display backlighting, audible indications and the like, which generally occur upon key actuation, are not performed. Partial disablement, on the other hand, may merely be disablement of the actual function or functions associated with the key.

5

If the processor detects actuation of the easy access key, the processor proceeds from Step 142 to Step 143. Step 143 includes the determination by the processor of the state of the phone and the performance of the consequential function. This is further explained with reference to Figure 15.

10

In this embodiment, the easy access key has a plurality of functions, depending upon the phone being in one of five states when the key is actuated. These five states are incoming call, alarm, headset attached, idle and message received, as explained briefly above.

15

If the processor 50 determines that, when the key is actuated, the phone is either in the incoming call state (decision 151) or the alarm state (decision 152), then the processor disables the audible indicator or speaker 38 (Step 156). Alternatively, if the processor 50 determines that, when the key is actuated, a headset is attached to the device (decision 153) or the phone is in the idle state (decision 151), then the processor accesses the last number redial menu. It also displays the last number redial option on the display 26.

20

The processor causes the received message to be displayed (Step 158) if the phone is in the message received state (decision 155) when the easy access key is actuated. Next, the processor determines whether the message displayed is the only one received. (Step 159). If it is, then once the message has been fully displayed, the processor returns the phone to its idle state (Step 146). However, if there is a further message, the processor waits for a further actuation of the easy access key (Step 145). If the key is not actuated within a predetermined period, then the processor returns the phone to its idle state (Step 146). However, on the other hand, if the key is actuated within the predetermined period, then the further message is displayed (Step 158).

25

30

Some functionality associated with movement of the cover has already being described such as: answering an incoming call by opening the cover, ending a call in progress by closing the cover and the change in the content of the display when the phone is in the idle mode effected by opening and closing the cover. A further function associated with the active flip is when the phone

The format of the message displayed in 173 may take various forms as illustrated in Figure 17b. The message may be static 176, with the user able to scroll up and down through the message by pushing the joystick up or pulling it down. The message may occupy several lines with it scrolling through the display word by word 177. For example, as a word disappears from the screen on the first line at the top left the whole message moves so that the next word is positioned at the top left hand corner of the display and one or

Claims

1. A portable device comprising:
a body;
5 a cover having a closed position for at least partially covering the body
and an open position;
a display; and
a multifunctional key accessible when the cover is in the closed
position,
10 wherein:
the function of the multifunctional key is dependent upon the state of
the device, and
for at least one state of the device, operation of the key controls the
provision of information on the display.
15
2. A device as claimed in claim 1, wherein the display comprises a portion
which is visible when the cover is in the closed position, and operation of the
key controls the provision of information on the portion of the display visible
when the cover is in the closed position.
20
3. A device as claimed in claim 1 or 2, which comprises a receiver.
4. A device as claimed in claim 3 wherein, when the device is in a state
corresponding to the receipt of a message, operation of the key controls the
25 provision of information corresponding to the message.
5. A device as claimed in any preceding claim wherein, when the device
is in a state corresponding to the receipt of a missed call, operation of the key
controls the provision of information corresponding to the missed call.
30
6. A device as claimed in any preceding claim, which comprises a
transmitter.

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23

7. A device as claimed in claim 6 wherein, when the device is in an idle state, operation of the key controls the provision of information corresponding to the last number dialled.
- 5 8. A device as claimed in claim 6 or 7 arranged for coupling to a headset, and when the device is in a headset coupled state, operation of the key controls the provision of information corresponding to the last number dialled.
9. A device as claimed in any preceding claim wherein operation of the
10 key is a single actuation.

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(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
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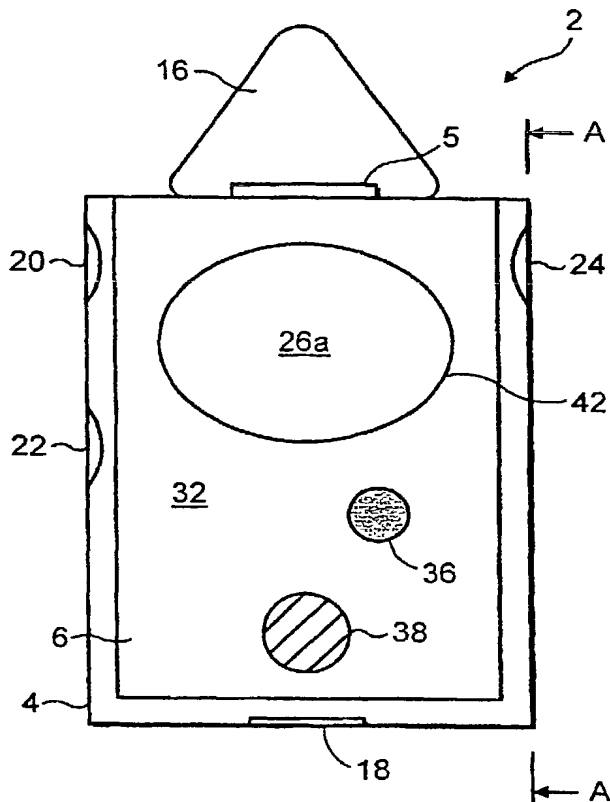
(10) International Publication Number
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FIN-02150 Espoo (FI). | | |

[Continued on next page]

(54) Title: A PORTABLE DEVICE



(57) **Abstract:** A portable device (2) is disclosed which comprises a body (4), a cover (6) and a key (36). The cover (6) has a closed position for at least partially covering the body, and the key is accessible when the cover is in this position. The functionality of the key changes depending upon the state of the device. One such function is the control of the provision of information on a display (26) of the device. This may occur, for example, if the key is actuated when the device is a phone and has received a message, or missed a call.

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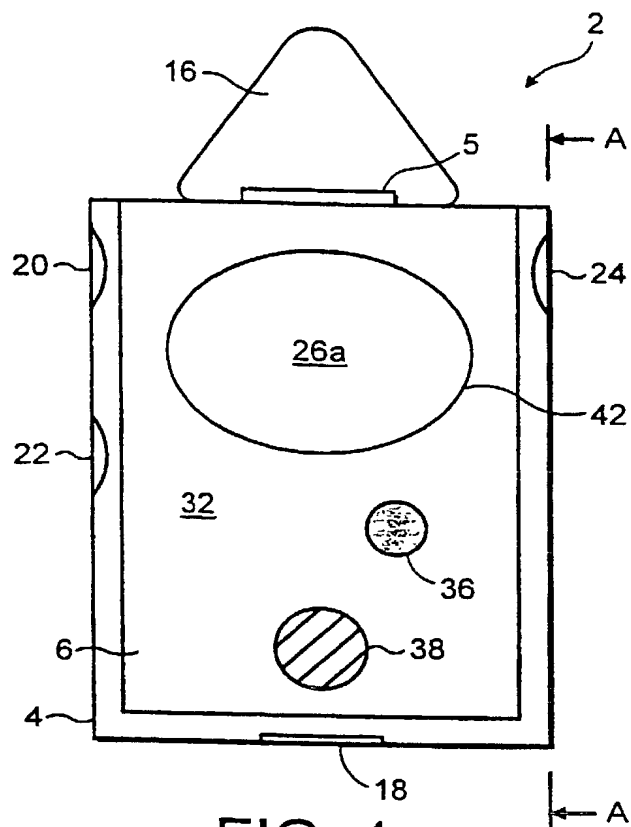


FIG. 1a

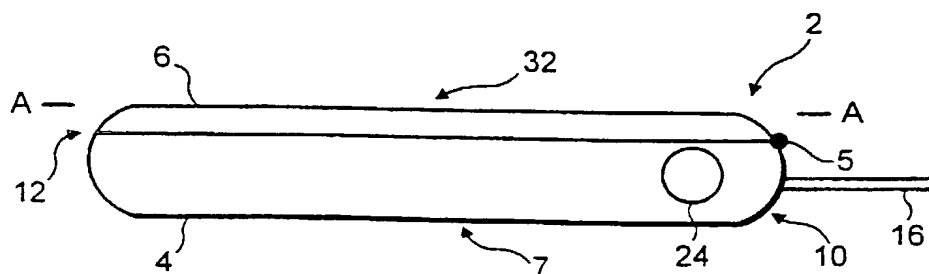


FIG. 1b

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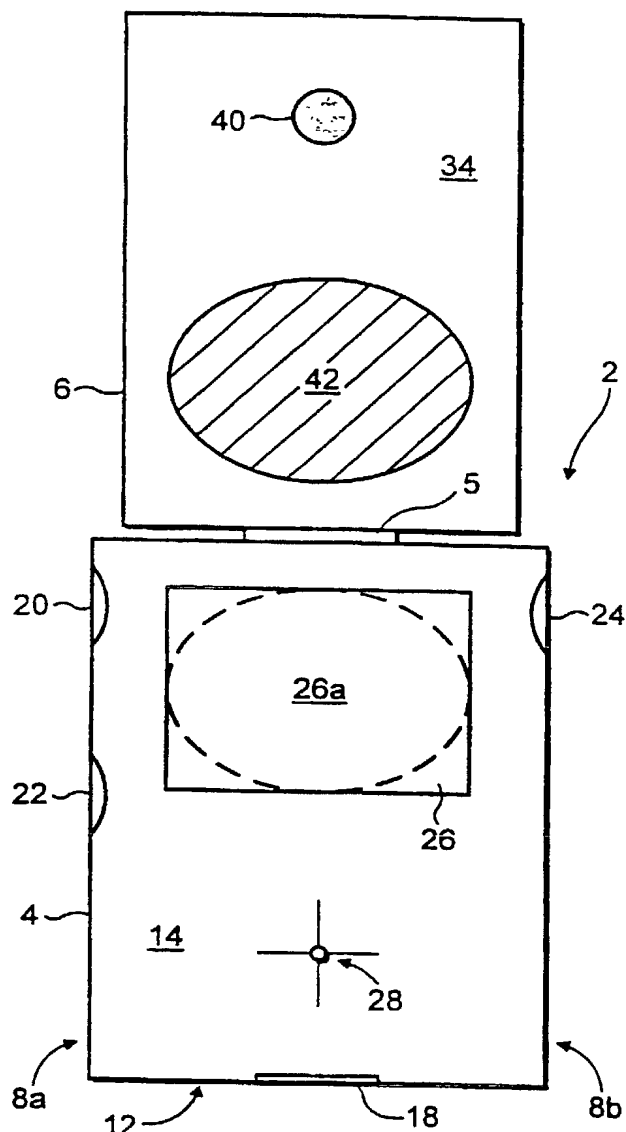


FIG. 2a

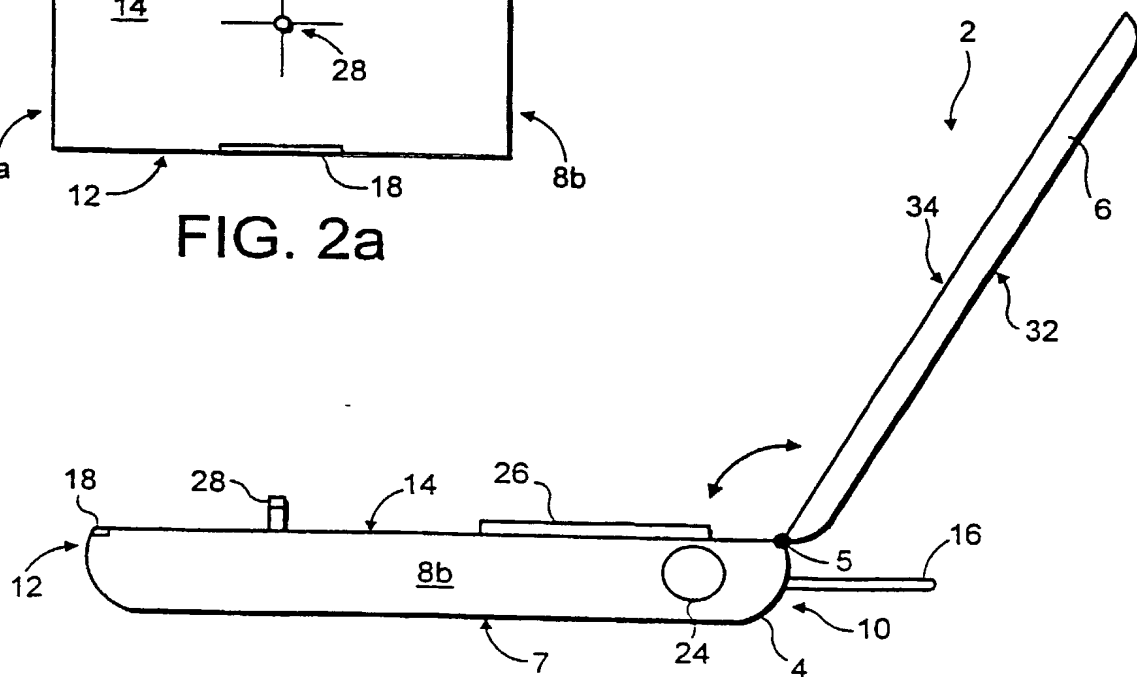


FIG. 2b

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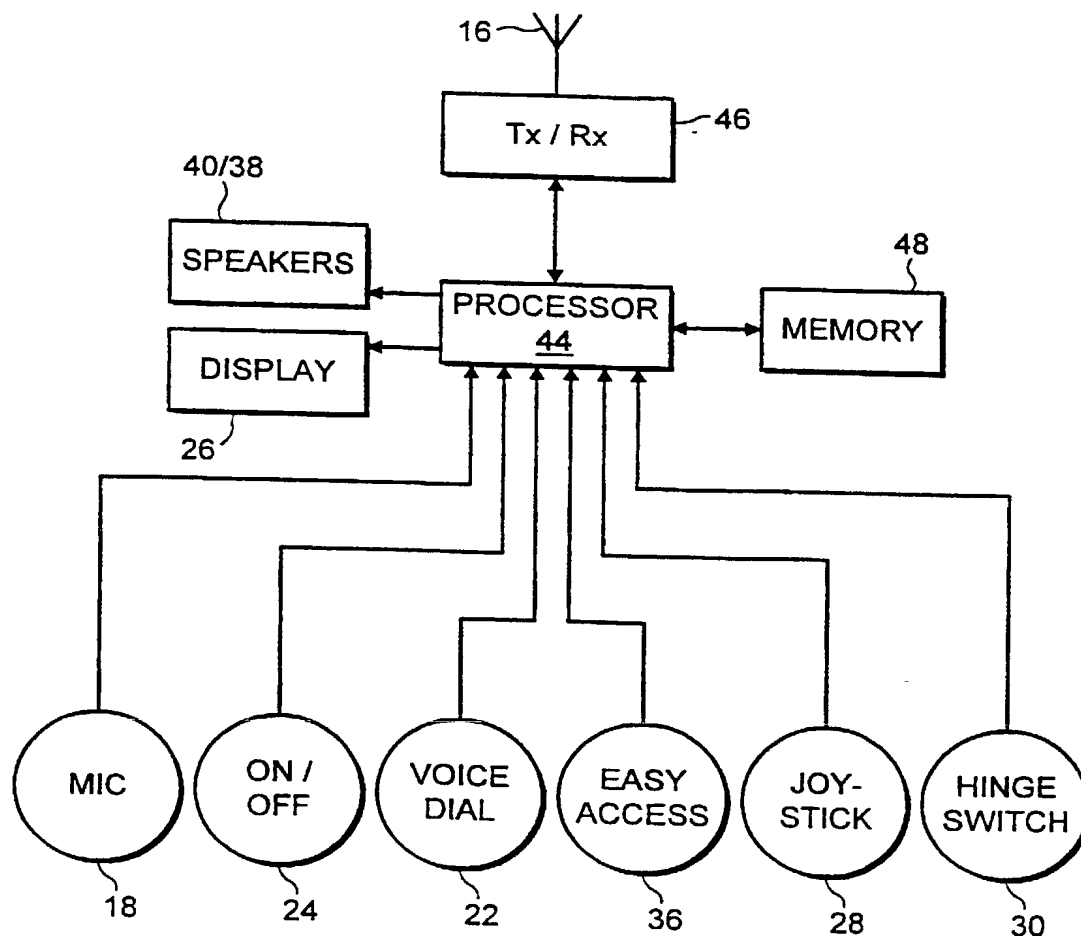


FIG. 3

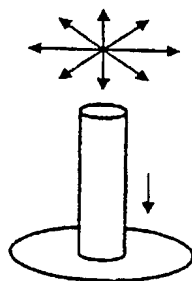


FIG. 4

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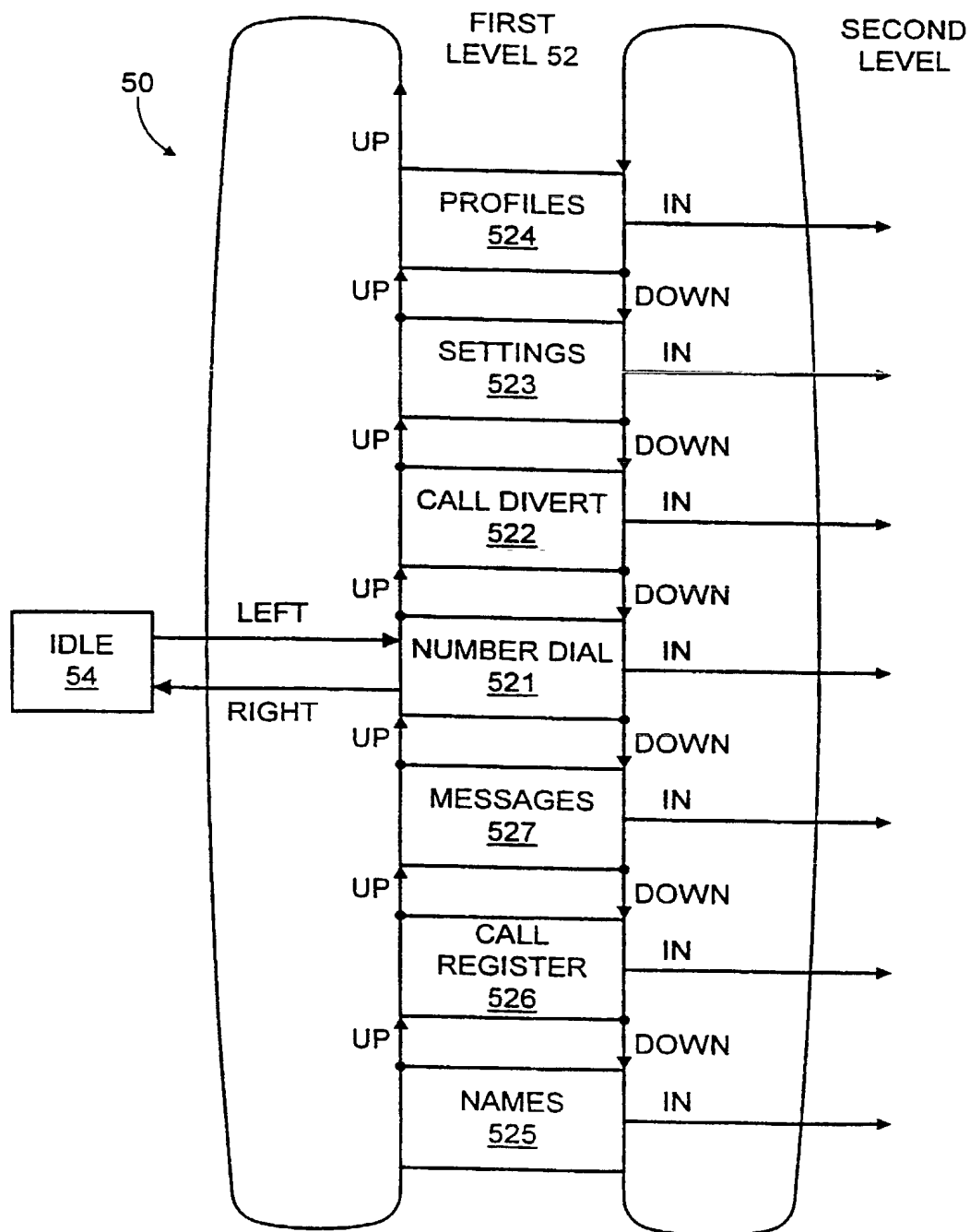


FIG. 5

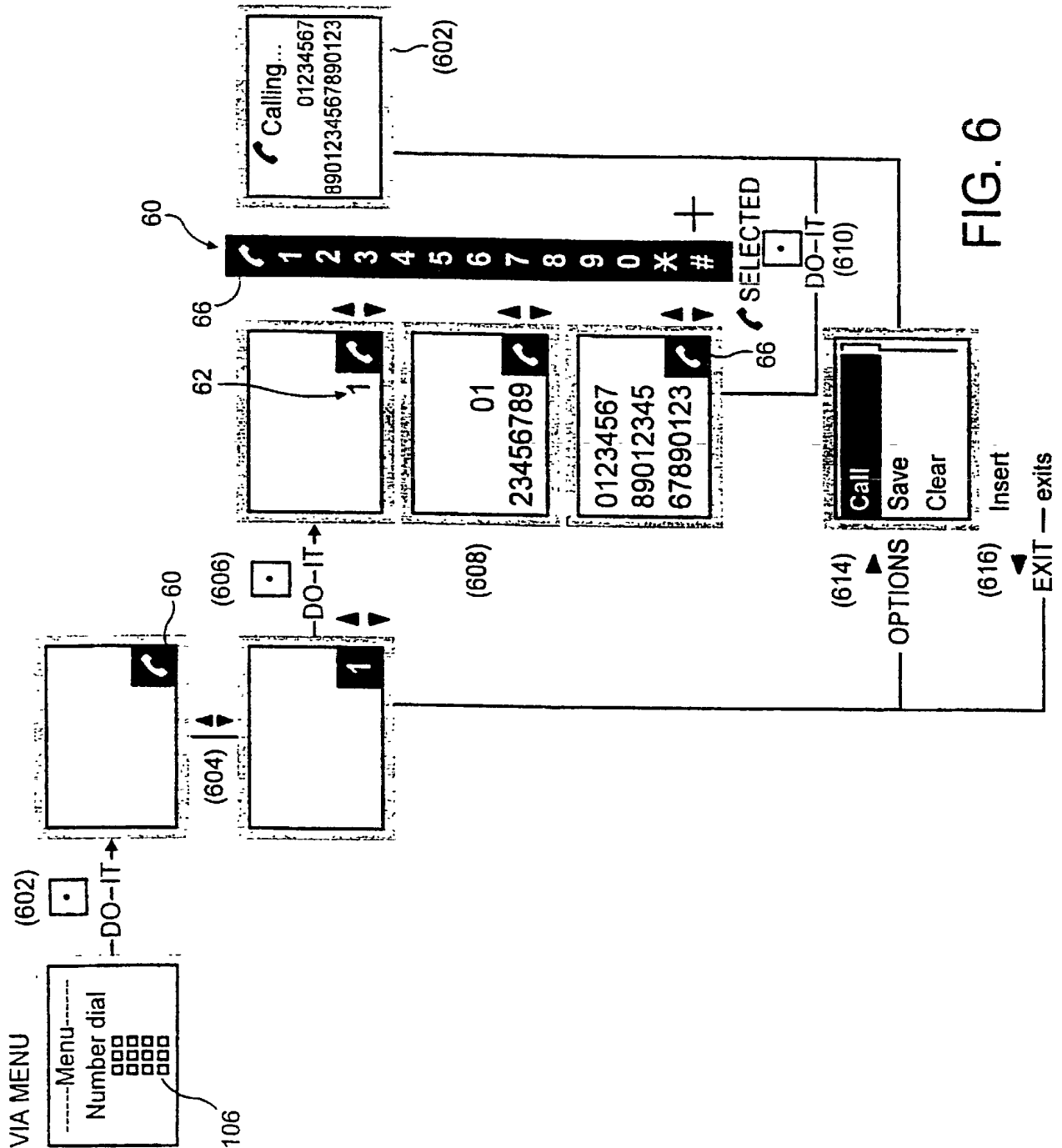


FIG. 6

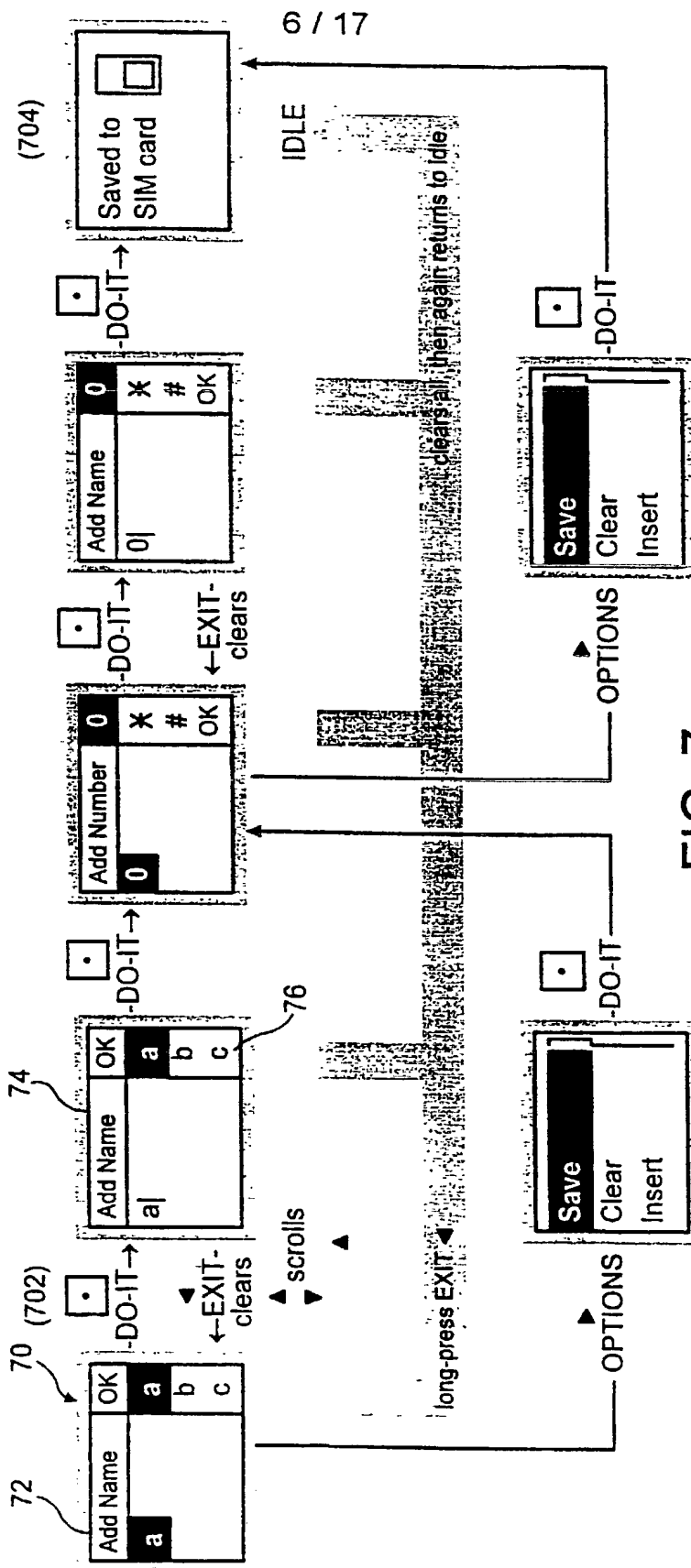


FIG. 7

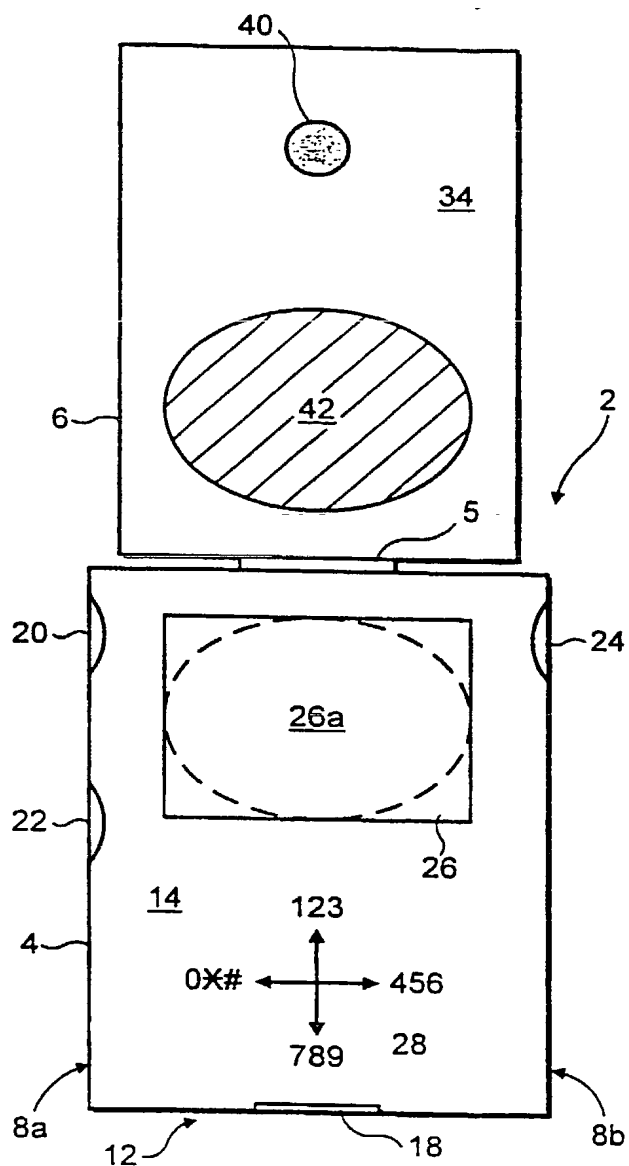
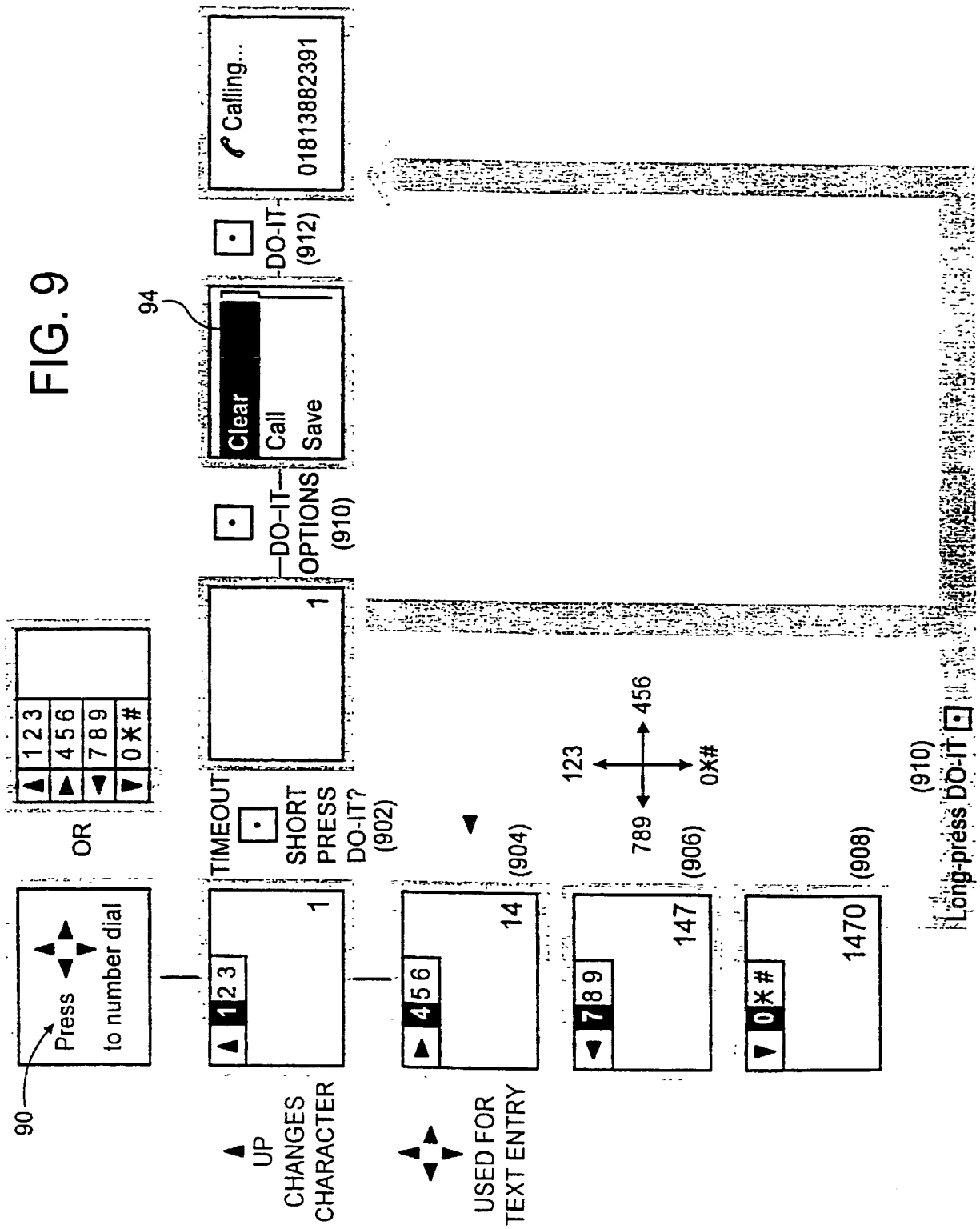


FIG. 8



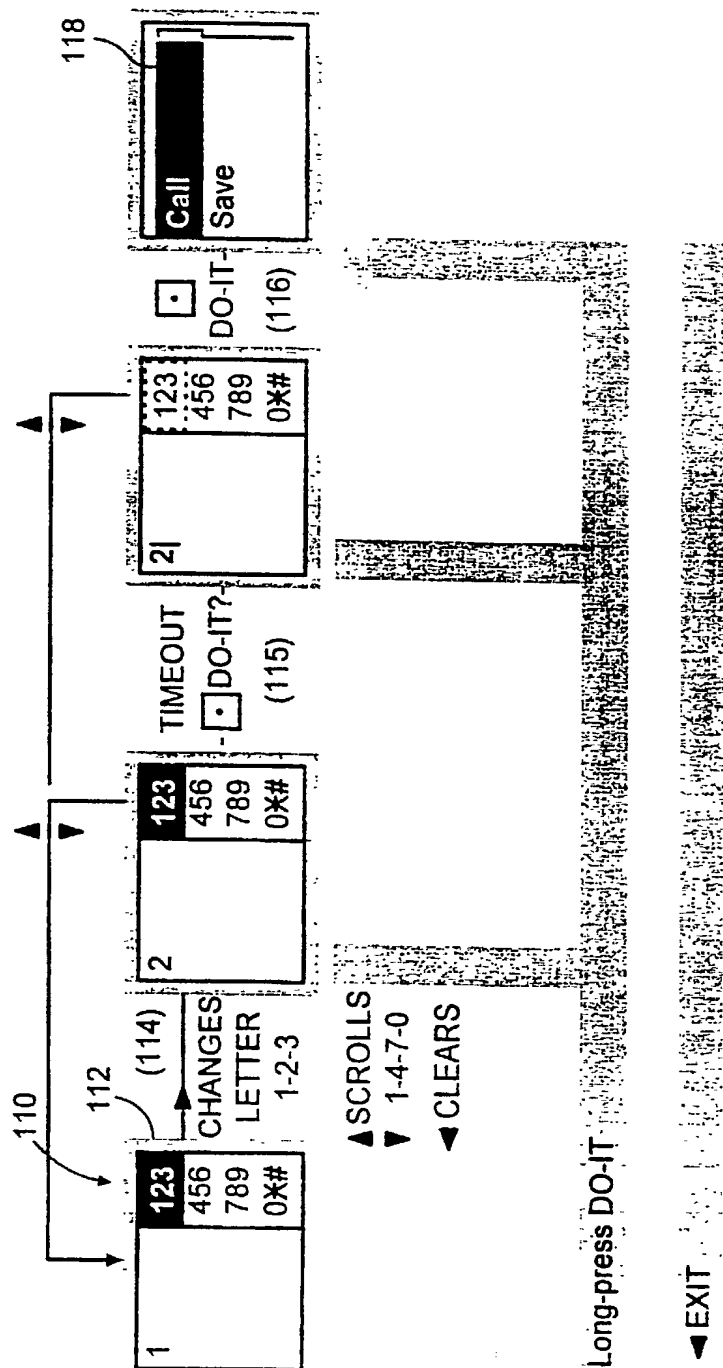


FIG. 10

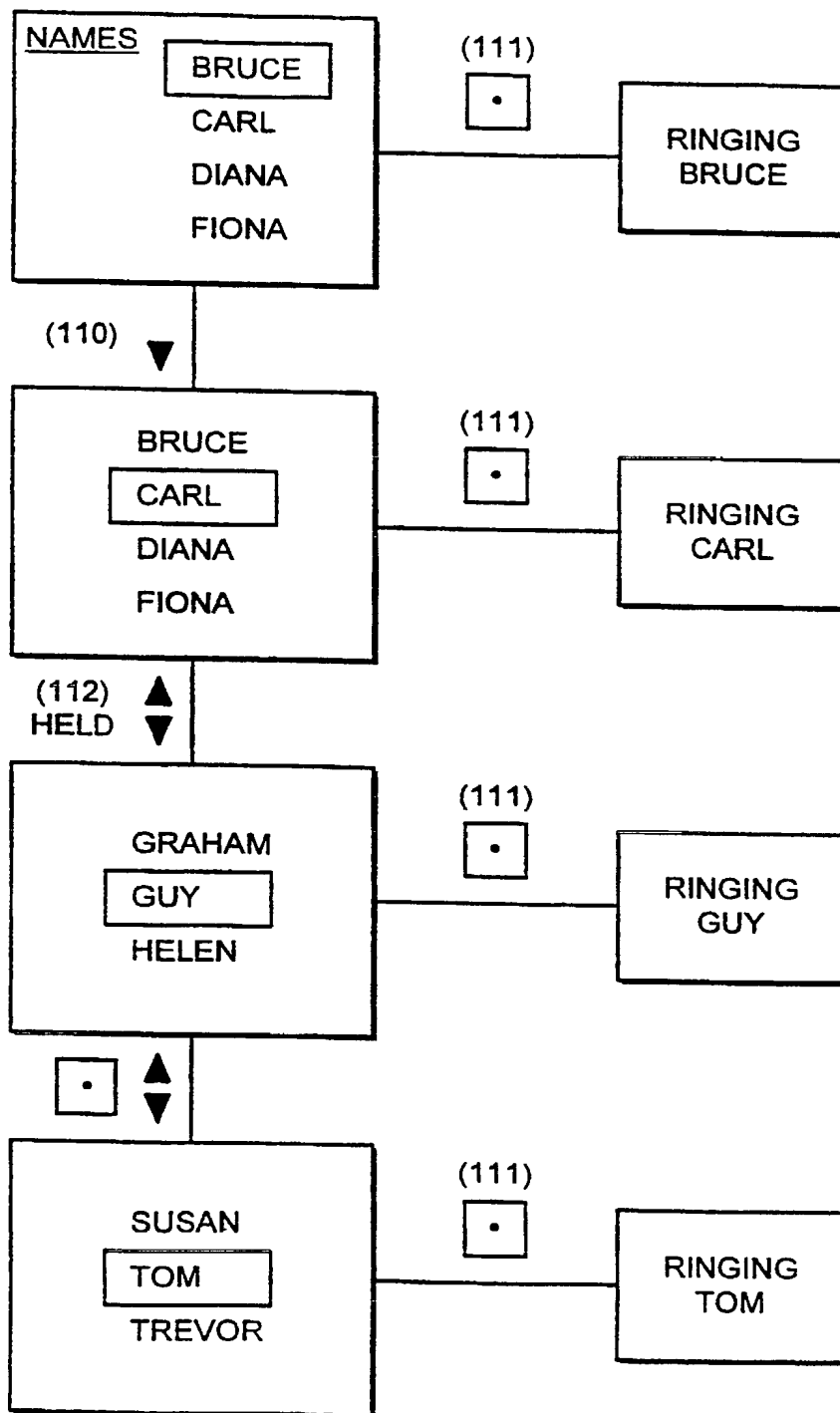


FIG. 11

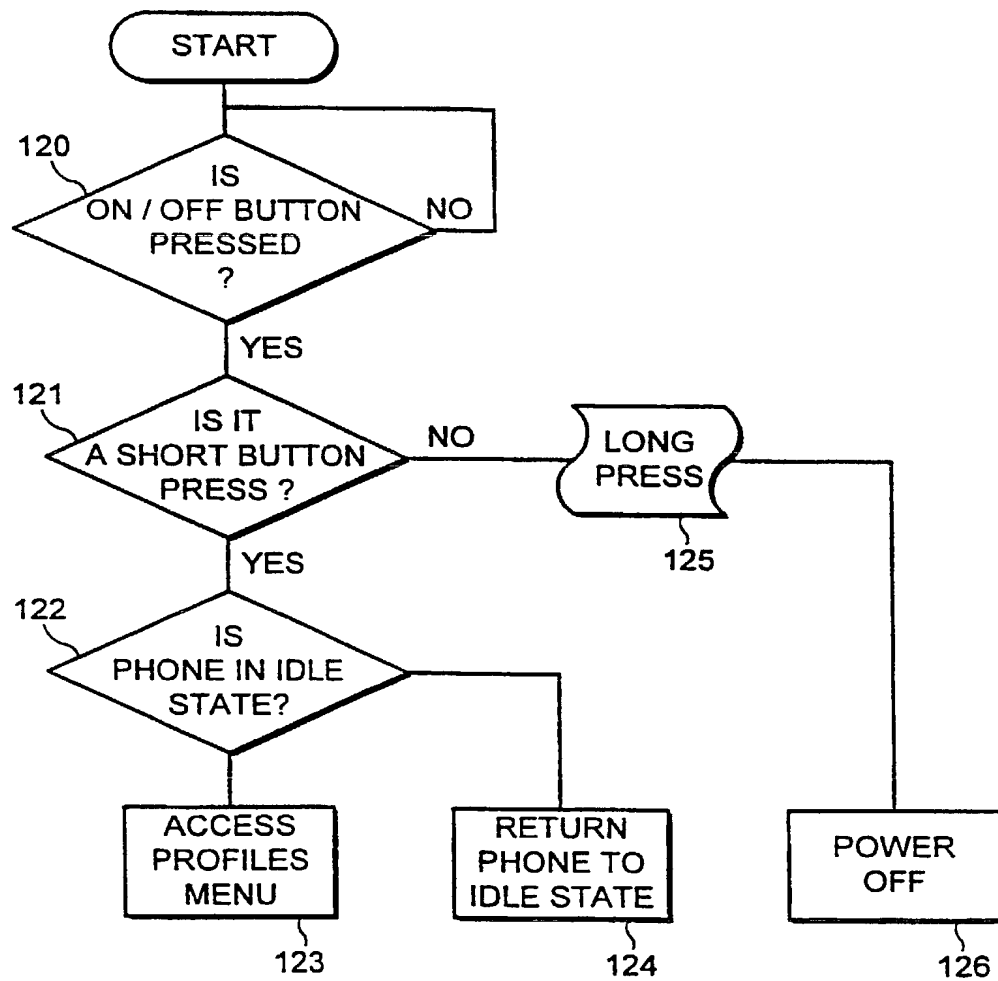


FIG. 12

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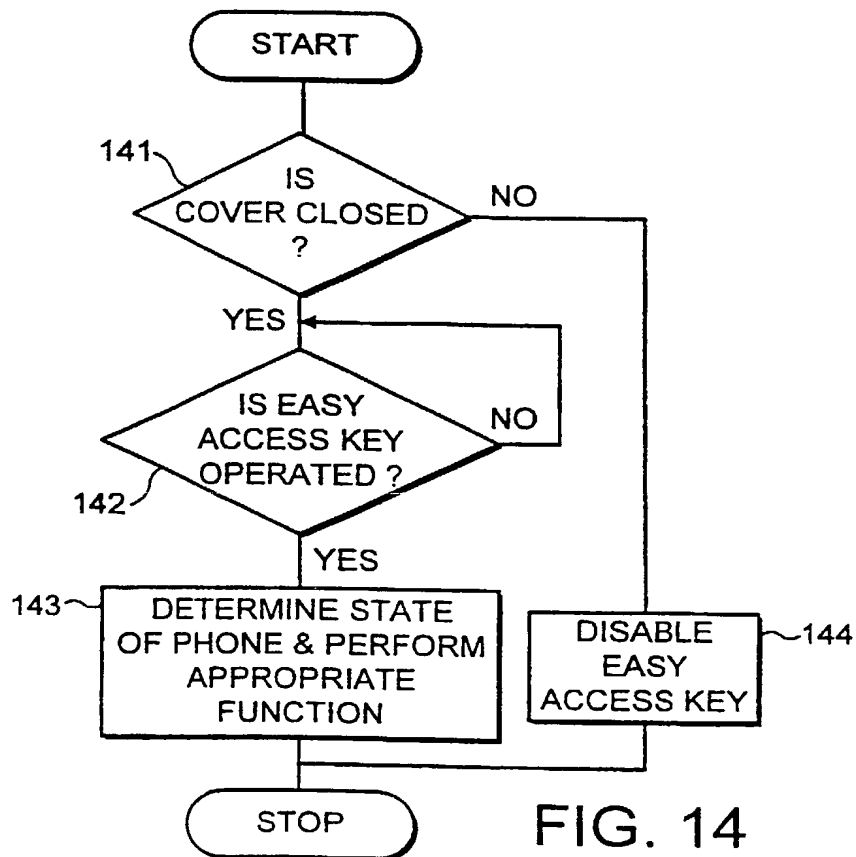
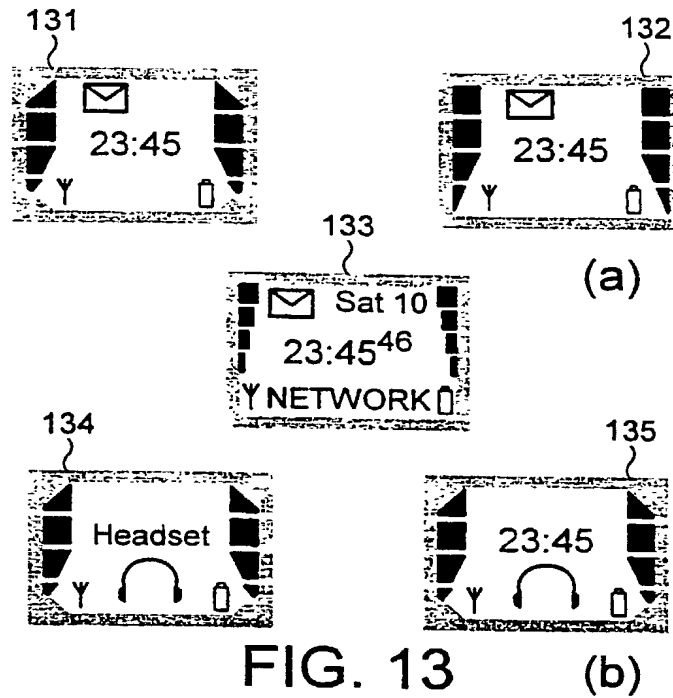


FIG. 14

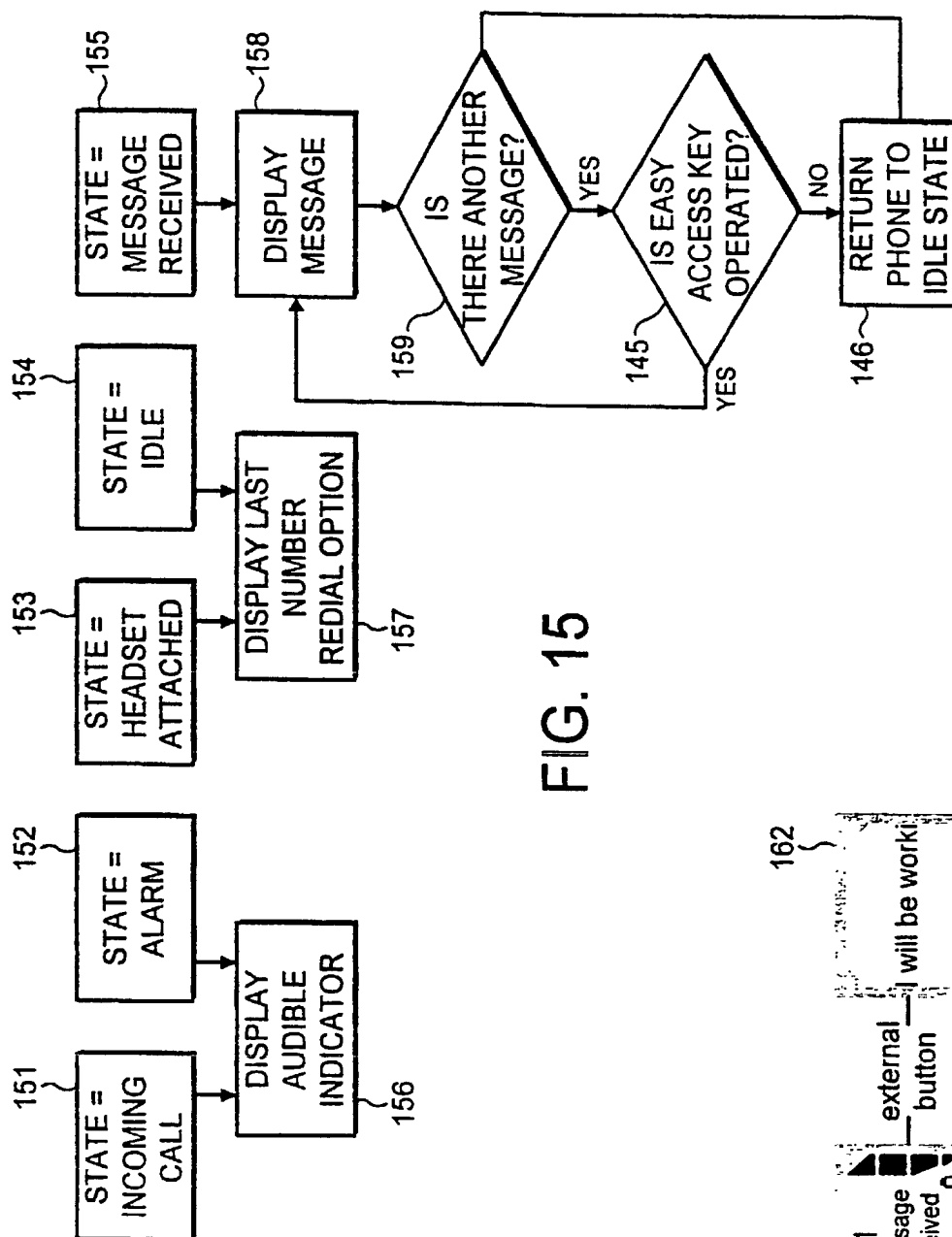


FIG. 15

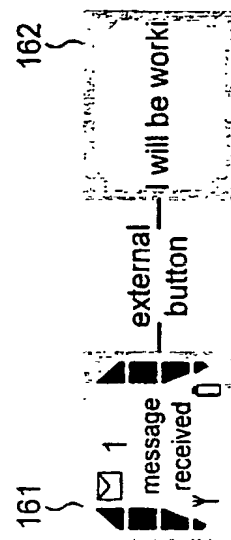


FIG. 16

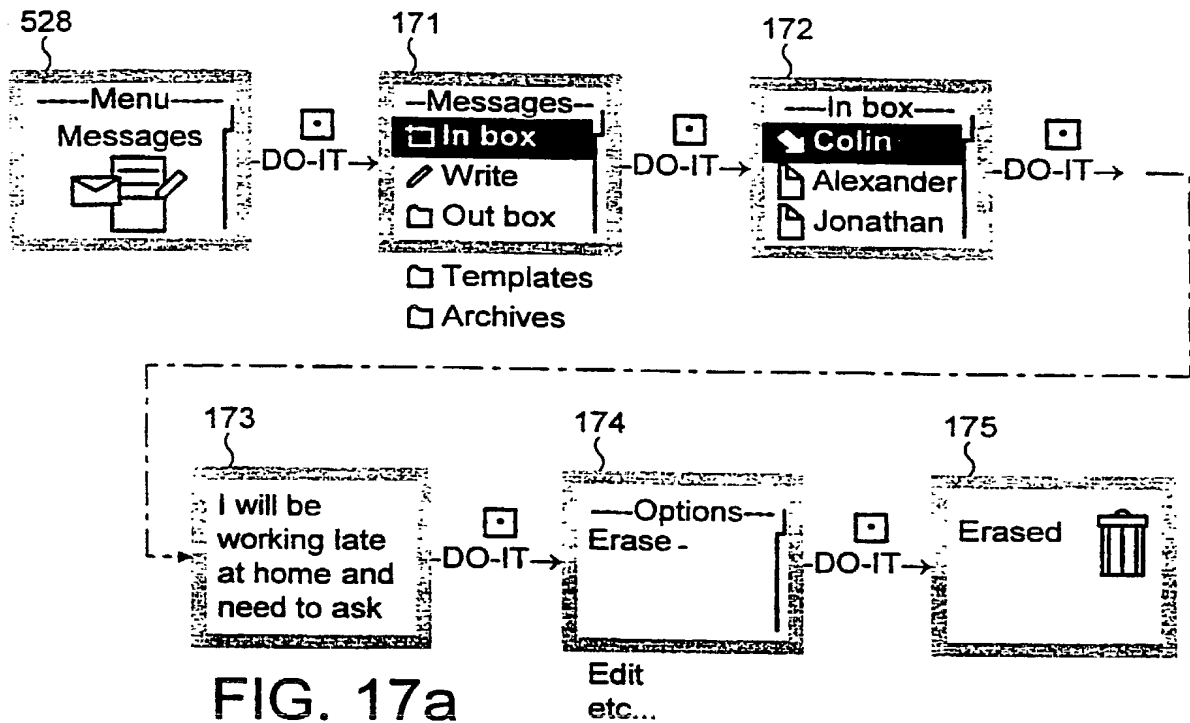


FIG. 17a

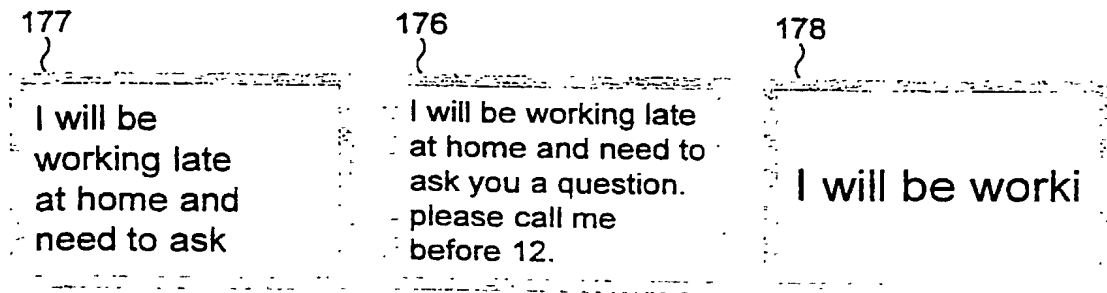


FIG. 17b

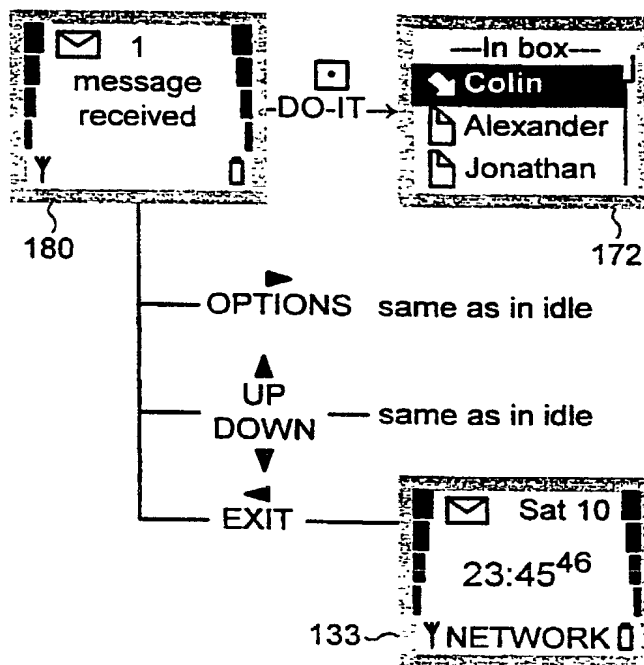


FIG. 18a

FIG. 18b

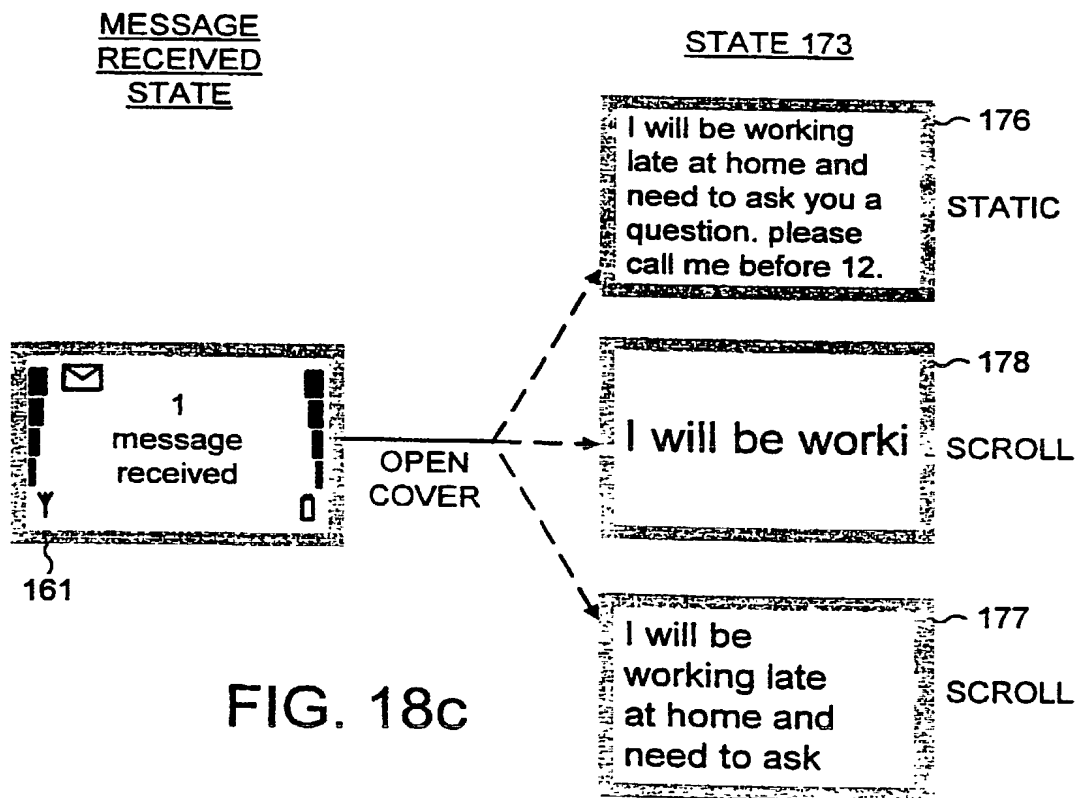


FIG. 18c

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that: my residence, post office address and country of citizenship are as stated below, next to my name; I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled a Portable Device

the specification of which

_____ is attached hereto.
X was filed on 5th April 2002 as
 United States Application Number 10/089,992
 or PCT International Application Number PCT/EP00/09338
 and was amended on _____
 (if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment referred to above. I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits, under 35 U.S.C. 119(a)-(d) or 365(b), of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or any PCT international application having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

			<u>Priority Claimed?</u>	
<u>9923960.0</u>	<u>GB</u>	<u>8 October 1999</u>	<u>X</u>	
(Number)	(Country)	(Foreign Filing Date)	Yes	No
_____	_____	_____	Yes	No
(Number)	(Country)	(Foreign Filing Date)	Yes	No

I hereby claim the benefit, under 35 U.S.C. 119(e), of any United States provisional application(s) listed below:

_____	_____
(Application Number)	Filing Date
_____	_____
(Application Number)	Filing Date

I hereby claim the benefit, under 35 U.S.C. 120, of any United States application(s) listed below:

_____	_____	_____
(Application Number)	Filing Date	(Status -- patented, pending, abandoned)
_____	_____	_____
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Title 37, Code of Federal Regulations, Section 1.56
Duty to Disclose Information Material to Patentability

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by 991.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

(1) Prior art cited in search reports of a foreign patent office in a counterpart application, and

(2) The closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or

(2) It refutes, or is inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the Office, or

(ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

(1) Each inventor named in the application;

(2) Each attorney or agent who prepares or prosecutes the application; and

(3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

(e) In any continuation-in-part application, the duty under this section includes the duty to disclose to the Office all information known to the person to be material to patentability, as defined in paragraph (b) of this section, which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

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Application Number

Filing Date

First Named Inventor

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SHARP, Jonathan

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